

REMARKS

Claims 1-37 are now pending in the application.

In the Office Action, claims 1-37 were rejected under 35 U.S.C. 112, second paragraph, as being indefinite. Applicants have amended claims 1, 3-9, 12, 16, 20, 21, 23, 29 and 37 to improve clarity of the claims language. Claims 1-37 are now submitted to be definite.

Claims 1-37 were rejected in the office Action under 35 U.S.C. 103(a) as being unpatentable over Baumgartner et al. (US 6,161,813) in view of Kilgore et al. (US 5,636,827).

Baumgartner et al. describes a control valve that has an anchor plate 28 that is displaceable on the anchor bolt 27, against the force of a spring. After the anchor bolt 27 has made contact with the valve seat, the anchor plate continues to move against the force of the spring until reaching a stop, so that the mass which is effectively decelerated in the valve seat is reduced by the mass of the anchor plate. In this manner, the elastic deformation of the valve seat, that produces an undesirable rebounding of the anchor bolt, is reduced. The wear of the sealing seat is thus reduced, and only the mass forces originating from the mass of the valve bolt have to be absorbed in the valve seat. According to Baumgartner et al., the forces acting on the sealing seat continue to be dependent on the dynamic processes of the valve, so that a defined desired sealing force cannot be adjusted. Also, the guide connector 39' is slidable over

the armature bolt 27. (Col. 4, lines 20-25.) The armature bolt thus can continue to move once the guide connector 39' has abutted on end face 41.

Kilgore et al. simply describes a needle bounce eliminator having a needle 34 that when brought to an abrupt stop by the valve seat, is allowed to compress by grooves or ripples formed in the needle. (Col. 2, lines 41-65.) Circumferential grooves 48 or notches 43, 44 and 46 may be used to allow the needle to compress. (Col. 3, lines 23-26.)

However, neither cited reference describes or suggests the arrangement of a valve rod of the valve actuator having at one end an actuator sealing surface cooperating with a sealing surface of a passage opening, and an actuator stop surface, larger than the sealing surface, disposed at a distance from the actuator sealing surface at another end of the valve rod to abut an opposing stop surface, the valve rod having a length greater by an excess length than a distance between the passage opening sealing surface and the opposing stop surface of the actuator, the excess length being selected to provide a desired sealing function at the actuator sealing surface and damping function at the actuator stop surface.

The cited references do not describe or suggest the excess length of the valve rod, and the cooperation of one end of the valve rod with the sealing surface and the other end of the valve rod with the stop surface, so that one end of the rod provides the sealing function while the opposite end provides the stopping of the rod and the associated damping function, when the excess length is taken up. Accordingly, applicants respectfully submit that claim 1 is not obvious in view of the cited references, and is allowable.

Claim 16 recites a valve rod of the valve actuator having at one end an actuator sealing surface cooperating with a sealing surface of the passage opening, to selectively close and open the passage opening and an actuator stop surface, disposed at a distance from the actuator sealing surface at another end of the valve rod to abut an opposing stop surface, the valve rod having a length greater by an excess length than a distance between the passage opening sealing surface and the opposing stop surface of the control valve. The same arguments made regarding claim 1 also apply to claim 16.

In addition, claim 16 recites that the sealing surface is formed in the end face of a disk-shaped insert part and adjoins the control pressure space on the side averted from the sealing surface, and the insert part contains an inlet choke in addition to an outlet choke. These features are also not described or suggested in the cited references. Accordingly, applicants respectfully submit that claim 16 is not obvious, and is allowable.

Claim 21 recites an actuator sealing surface that engages the sealing surface of the opening when the valve actuator is at the closing position, an actuator stop surface that engages the opposing stop surface when the valve actuator is at the closing position, and a valve rod defining at one end the actuator sealing surface and at another end the actuator stop surface, wherein when the valve actuator is at the closing position, the valve rod is compressed to a length that is shorter by an excess length than a length of the valve rod when the valve actuator is at the opening position. In view of the foregoing arguments

regarding claim 1, applicants respectfully submit that claim 21 is not obvious and is allowable.

The remaining claims depend from allowable claims, and at least for that reason are also submitted to be allowable.

If there are any questions regarding this amendment or the application in general, a telephone call to the undersigned would be appreciated since this should expedite the prosecution of the application for all concerned.

If necessary to effect a timely response, this paper should be considered as a petition for an Extension of Time sufficient to effect a timely response, and please charge any deficiency in fees or credit any overpayments to Deposit Account No. 05-1323 (Docket #010816.50684).

Respectfully submitted,

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